

REMARKS/ARGUMENTS

With this amendment, claims 1-2, 4-9, 11-26, and 28-40 are pending. Claims 3, 10, and 27 are cancelled. For convenience, the Examiner's rejections are addressed in the order presented in a February 4, 2005, Office Action.

I. Status of the claims

Claim 1 is amended to recite that the second conduit includes a second aerobic reactor to accept effluent from the first aerobic reactor. Support for this amendment is found throughout the specification, for example, at original claim 3 and at Figures 1 and 2. Claims 4, 5, 11, and 14 previously depended from now cancelled claims 3 or 10 and are now amended to depend from claim 1. These amendments add no new matter.

Claim 26 is amended to recite a step of treating an effluent from the first aerobic reactor in a second aerobic reactor. A step of passing the second aerobic reactor effluent through a filtration device is also now recited. Support for this amendment is found throughout the specification, for example, at original claim 27 and at Figures 1 and 2. This amendment adds no new matter.

Claim 39 is amended to recite reverse osmosis concentrate, rather than reverse osmosis permeate in line 4, as required by the Office Action. This amendment adds no new matter.

II. Claim objections

Claim 39 is amended to correct a typographical error. Applicants thank the Examiner for pointing out the error. In view of this amendment, withdrawal of the claim objection is respectfully requested.

III. Rejections under 35 U.S.C. §102

According to the Office Action, various combinations of claims are anticipated by one of three references. To the extent the rejections apply to the amended claims, Applicants traverse the rejection.

To anticipate a claim, a reference must teach every element of the claim. “A claim is anticipated only if each and every element as set forth in the claim is found...in a single prior art reference.” *Verdegaal Bros. v. Union Oil of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). Thus, in order to anticipate, the cited references must contain every element of the claims at issue. As discussed below, the cited references do not.

A. Narukami et al.

Claims 26, 28-29, 37-39, and 40 are rejected under 35 U.S.C. §102(b) as allegedly anticipated by Narukami *et al.* Independent claim 26 is now amended to recite a step of treating for a third period, the effluent from the first aerobic reactor in a second aerobic reactor to form a second aerobic reactor effluent. Narukami *et al.* does not disclose two periods of treatment in aerobic reactors, as is now claimed. Therefore, Narukami *et al.* does not teach every element of the claimed methods and, thus, cannot anticipate the claims.

B. Daigger et al.

Claims 26-29, 36-37, 39, and 40 are rejected under 35 U.S.C. §102(e) as allegedly anticipated by Daigger *et al.* As amended, the claims are not anticipated by Daigger *et al.* The amended claims now include a step of treating for a third period, the effluent from the first aerobic reactor in a second aerobic reactor to form a second aerobic reactor effluent. As before, the first step is treatment of a wastewater mixture under anaerobic conditions in an anaerobic reactor. In contrast, Daiggert *et al.* discloses only effluent from a first aerobic zone flowing into a second anoxic zone (*i.e.*, a zone lacking oxygen and therefore, not an aerobic zone). Daiggert *et al.* does not disclose a step of effluent from a first aerobic zone flowing into a second aerobic zone. Applicants also assert that Daiggert *et al.* does not disclose use of a reverse osmosis unit.

Therefore, Daiggert *et al.* does not disclose all the elements of the claimed methods and, thus, cannot anticipate the claims.

C. Oswald et al.

Claims 26, 30-32, and 35-40 are rejected under 35 U.S.C. §102(e) as allegedly anticipated by Oswald *et al.* Independent claim 26 is now amended to recite a step of treating for a third period, the effluent from the first aerobic reactor in a second aerobic reactor to form a second aerobic reactor effluent. Oswald *et al.* does not disclose two periods of treatment in aerobic reactors, as is now claimed. Therefore, Oswald *et al.* does not teach every element of the claimed methods and, thus, cannot anticipate the claims.

In view of the above arguments and amendments, Applicants respectfully request withdrawal of the rejections for alleged anticipation.

IV. Rejections under 35 U.S.C. §103

According to the Office Action, various combinations of claims are made obvious in view of one of three references. To the extent the rejections apply to the amended claims, Applicants traverse the rejection.

The Office Action has not established a case of *prima facie* obviousness. To establish a case of *prima facie* obviousness, the Examiner must meet three basic criteria:

First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the references or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). M.P.E.P. §§ 706.02(j) and 2143.

The references cited by the Examiner fail to provide a reasonable expectation of success in practicing the invention and fail to provide a motivation for the combination of the

references. In addition, the references cited by the Examiner fail to provide all the elements of the rejected claims. As discussed below, the cited references do not support the rejection for alleged obviousness.

A. Oswald et al.

Claims 1-2, and 16-25 are rejected as allegedly obvious in view of *Oswald et al.* According to the Office Action, *Oswald et al.* discloses an anaerobic reactor, an aerobic reactor, a filtration device, and a desalinization device. However, *Oswald et al.* does not teach or suggest two aerobic reactors as required by the amended claims. *Oswald et al.* is primarily concerned with providing a sewage treatment system that also provides a source of green algae. There is no suggestion in *Oswald et al.* or in the knowledge available to those of skill that adding a second aerobic reactor would improve green algae production. Therefore, the disclosure of *Oswald et al.* does not render the amended claims obvious to those of skill.

B. Daigger et al.

Claims 1-3, 5-8, 9-10, and 14-15 are rejected as allegedly obvious in view of *Daigger et al.* According to the Office Action, *Daigger et al.* disclose an anaerobic reactor, two aerobic reactors, a filtration device, and a desalinization device. However, *Daigger et al.* does not disclose the treatment system comprising a first aerobic reactor connected to a second conduit that comprises a second aerobic reactor to accept a liquid effluent from the first aerobic reactor, as is claimed. Rather, *Daigger et al.* disclose a first aerobic zone with effluent that flows into a second anoxic zone, *i.e.*, an anaerobic zone. Effluent from the second anoxic zone then flows into the second aerobic zone. The second anoxic zone is necessary for the system and method of *Daigger et al.* to provide de-nitrification of the effluent before oxidation of the effluent. There is no teaching or suggestion in *Daigger et al.* to connect two aerobic zones to allow effluent from the first to flow directly to the second. Therefore, the disclosure of *Daigger et al.* does not render the amended claims obvious to those of skill.

C. *Any one of Narukami et al., Daigger et al., and Oswald et al.*

Claims 34-35 are rejected as allegedly obvious in view of any one of Narukami *et al.*, Daigger *et al.*, and Oswald *et al.* According to the Office Action, each of cited references disclose methods that could have been modified to include an ABSBR or an ASBR. As amended, the claims now include a step of treating for a third period, the effluent from the first aerobic reactor for a third period in a second aerobic reactor to form a second aerobic reactor effluent. None of the cited references teach or suggest methods with a step of treating an effluent from any type of aerobic reactor for a period in any type of second aerobic reactor. Claims 33 and 34 recite use of an ABSBR or an ASBR in a step of anaerobic fermentation. None of the cited references teach or suggest methods using an ABSBR or an ASBR.

None of the cited references provide a motivation for their modification to include use of an ABSBR or an ASBR. Oswald *et al.* is concerned with optimizing growth of algae. Daiggett *et al.* discloses an anoxic zone between two aerobic zones to provide de-nitrification of the effluent. Narukami *et al.*, discloses de-nitrification of wastewater in an anaerobic reactor before passage to a single aerobic reactor; no motivation for a second aerobic reactor is provided. Specifying an ABSBR or ABSR reactor in the disclosures of the cited references will not cure these deficiencies. Thus, the cited references, alone or in combination, fail to provide the disclosure or motivation to support the rejections under 35 U.S.C. §103(a).

In view of the above arguments and amendments, Applicants respectfully request withdrawal of the rejections for alleged obviousness.

CONCLUSION

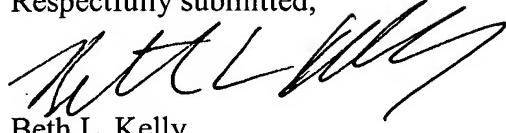
In view of the foregoing, Applicants believe all claims now pending in this Application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 415-576-0200.

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PATENT

Respectfully submitted,


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Attachments

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